

Recommended Screening Checklist for First Responders

Addendum to:

“Update for First Responders: Procedures for Suspicious Envelopes, Packages, Powder”

“Be prepared to perform basic field screening of the biological sample to rule out radiation, flammability, corrosives, and volatile organic compounds to gain acceptance into the LRN, as coordinated with the FBI WMD Coordinator.”¹

“It is recommended that any specimen with a credible threat or unusual substance should be screened for chemical, radiological, or explosive materials (unless there is not enough material available for testing) before it can be processed by the Washington State Public Health Laboratories. Documentation of any screening must accompany the specimen to the laboratory.”²

“Washington State Department of Health does not recommend using field tests for biological agents. Such testing methods are neither sensitive nor specific, meaning that there are likely to produce false positive or false negative results, leading to unnecessary concern and action.”²

“Liquids must be screened for chemical, explosives and toxins before sending samples to the Washington State Public Health Laboratories.”²

The Washington State Public Health labs recognize that not all HazMat teams will have the necessary equipment or capability to conduct all of the screening described below. In those circumstances the responding agency should consider following the recommendation of the International Association of Fire Chiefs (IAFC).

“Equipment to measure most threats is available, but may be cost prohibitive to smaller agencies. Smaller agencies should consider:

- pooling resources to purchase the equipment
- establishing regional teams that are proficient in using and operating the equipment
- establishing partnerships with other agencies (e.g., nearby military units, laboratories) that specialize in detecting or working with WMD agents.”¹

Smaller agencies can also contact Washington State Patrol Communications for assistance.

Recommended Screening and information to be included, in a suggested order in decreasing priority:³

1. Explosive Device screening:

Follow your local response protocols.

2. Radiation hazard screening:

Screen for any radiation readings above background using a radiological survey meter.

- a. Record radiation meter(s) used, model and serial number.
- b. Record date of last calibration of instrument.
- c. Record units of measurement (i.e., $\mu\text{R/hr}$, mGy/hr).
- d. Record actual readings (*alpha* (α), *beta* (β) and/or *gamma* (γ)) if available per instrumentation.

If any of the radiation screenings reveal any radiation hazard, regardless of the screening methodology, notify the State Radiation Control Officer immediately (206-682-5327).

¹ **Model Procedures for Responding to a Package with Suspicion of a Biological Threat**, January 2004, International Association of Fire Chiefs, In cooperation with FBI Hazardous Materials Response Unit, FBI Laboratory Division

² **Update for First Responders: Procedures for Suspicious Envelopes, Packages, Powder**, September 2, 2003 Information Bulletin Coordinated and Published by: WSCOT, WSAFC, WSASCP, WSDOE, WSDOH, WSEMA, WSEMD, WSHA, WSP, OSFM, FBI

³ **Public Safety WMD Response – Sampling Techniques and Guidelines**, Participant Manual, National Center for Biomedical Research and Training, Academy of Counter-Terrorist Education, Louisiana State University (Office of Domestic Preparedness course PER-222)

3. Chemical Hazard Screening:

3.1. Corrosive Atmosphere (pH paper, must be wetted if in low to mid-humidity, both red and blue litmus papers, or colorimetric direct reading instrument)

If using pH or litmus papers:

- a. Check that pH/litmus paper has not been compromised (is the normal, unexposed, color).
- b. Check that wetted pH/litmus paper has not been compromised.
- c. Record color of dry an/or wetted pH/litmus paper after suspect atmosphere exposure.
- d. Record corresponding pH/acidic/basic atmosphere from color scale.

If using direct reading instrument:

- a. Record detector used, model and serial number.
- b. Record date of last calibration.
- c. Record reading(s).

Often a multi-gas detector (i.e., APD2000, Sabre2000, MultiRae, SAW MiniCAD, HazMatCAD) is used to perform many of the following screening tasks. When a multi-gas detector is used only record instrument data once.

3.2. Oxygen Percentage:

Oxygen deficient or oxygen-enriched atmospheres directly affect flammability/explosive hazard levels as well as the indicators used to measure flammable indicators. The presence of oxidizers can increase the level of oxygen in the atmosphere, as well as presenting an increased flammable/explosion hazard.

- a. Record equipment used, model and serial number.
- b. Record date of last calibration.
- c. Record % oxygen reading(s).
- d. If using oxidizer indicator paper (KI-starch paper) then record color change/no change.

3.3. Fire/explosive atmosphere hazards:

- a. Record equipment used, model and serial number.
- b. Record date of last calibration.
- c. Record LEL, LFL, or equivalent reading(s).

3.4. Corrosive/toxic liquids and atmospheres and Toxic Industrial/Military Chemicals:

- a. Record equipment/device(s) used, model and serial number.
- b. Record date of last calibration.
- c. Record VOC and any other reading(s), i.e., H₂S.

3.4.1 Chemical Detector Papers and Kits:

- a. M-8 paper: screens for G and V nerve and H blister agents (and liquid organophosphorus and carbamate insecticides and pesticides)
- b. M-9 tape paper: screens for H and L blister and G and V nerve agents (and liquid organophosphorus and carbamate insecticides and pesticides).
- c. M-256 vapor detection kit: screens for G and V nerve agents, blister agents (H, Lewisite, CX) and blood agents (AC and CK)

3.4.2 WMD Monitors (i.e., APD 2000, SAW MiniCAD):

- a. Record equipment used, model and serial number.
- b. Record date of last calibration.
- c. Record V, G, H and L chemical agent reading(s).

The following checklist is provided as a model and is for guidance purposes only. It may be reproduced, modified, and used by responding agencies at their own discretion and as it fits within each agencies individual Standard Operating Guidelines (SOGs).

BASIC INFORMATION

Names of personnel conducting screening:

Agency:		Date:		Response Location:	
		Case Number: _____			
Screening location:		Explosive Screening Method:	Physical State of material:	Paper Indicator Tests:	
			<input type="checkbox"/> Gas <input type="checkbox"/> Liquid <input type="checkbox"/> Solid <input type="checkbox"/> Mixture (of)	pH <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> < 6 (red) 6-8 (yellow-green) > 8 blue)	
		Result:		Corrosive atmosphere: <input type="checkbox"/> No <input type="checkbox"/> Yes	
				KI-starch paper: _____	
Radiation (circle unit)	Device used:	PID/FID-VOC:		Device used:	
background: μ R/hr	Model & SN			Model & SN	
mRem/hr					
_____ cpm	Date of calibration			Date of calibration	
measured: mGy/hr					
Bq					
_____ Sv/hr					
Oxygen	Model & SN	LEL background		Device used:	
_____ %		_____ %		_____	
Device used:	Date of calibration	LEL/LFL measured		Model & SN	
_____		_____ %		_____	
				Date of calibration	

WMD AGENTS

M-8 paper:		M-9 tape:		M-256 kit:	
<input type="checkbox"/> red - H (blister) <input type="checkbox"/> green - V (nerve) <input type="checkbox"/> yellow - G (nerve) <input type="checkbox"/> tan (no change)		<input type="checkbox"/> red/pink to brown (nerve, blister, organic solvents) <input type="checkbox"/> green (no change)		<input type="checkbox"/> Lewisite <input type="checkbox"/> blister <input type="checkbox"/> blood <input type="checkbox"/> nerve	
Nerve Agents: (G and/or V)	Blister Agents: (H)	Blood Agents:	Choking Agents:	Device used: _____	
<input type="checkbox"/> absent	<input type="checkbox"/> absent	<input type="checkbox"/> absent	<input type="checkbox"/> absent	Model & SN _____	
<input type="checkbox"/> present	<input type="checkbox"/> present	<input type="checkbox"/> present	<input type="checkbox"/> present	Date of calibration _____	

Signatures of personnel conducting screening